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EXAMINER	
GREY, CHRISTOPHER P	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/675,009	LEE ET AL.	
	Examiner	Art Unit	
	CHRISTOPHER P. GREY	2416	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 December 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-5,7-22 and 24-26* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-5,7-22 and 24-26* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. In view of applicant's amendment filed on 12/8/08, the status of the application is still pending with respect to claims 1-5, 7-22 and 24-26.

Response to Arguments

2. Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection. The amendments made to the claims 1, 12 and 22 have necessitated further search and consideration, and therefore the new grounds of rejection is proper.

Claim Objections

3. Claim 1 is objected to because of the following informalities: The last line of the claim claims, “and not allocating non-CAR.”. The examiner asserts that the claimed subject matter is incomplete (examiner suggests deleting this portion of the limitation) and contradictory, as the previous claimed subject matter states that the non-CAR packets are dynamically allocated.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1, 4, 5, 7, 8, 12, 15, 16, 17 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Le Gouriellec et al. (US 2003/0112756), hereinafter referred to as Le Gouriellec and Agrawal et al. (US 2003/0081546), hereinafter referred to as Agrawal.

Regarding Claim 1, Le Gouriellec discloses classifying **(Para 0031 teaches a classifier for classifying)** each received packet in an IP/Ethernet **(Para 0024 discusses Ethernet)** network into one of a plurality of quality of service (QoS) groups **(Para 0032, where in profile and out of profile are 2 groups)** using information in a header of the packet **(Para 0031);**

measuring and checking a traffic rate profile of the received packet against a corresponding service level agreement **(Para 0032, meter checks traffic profiles..);**

marking the packet as one of an in profile packet and an out of profile packet **(page 3, Para 0032, identifies packets as in-profile or out of profile, and Para 0033, marker marks packet);**

a CAR packet is an in profile packet if the CAR packet is within the corresponding SLA **(Para 0037, all traffic within eh CR is left unmarked)** so that the

CAR a packet receives congestion free service **(Para 0039, unmarked traffic is protected even when congestion is encountered);**

and wherein a CAR packet is marked as an out of profile packet if the CAR packet exceeds the SLA **(Para 0037, all traffic above the CR but below the CR+ER is marked to be dropped in case of congestion)** and is one of provided with the best effort services **(Para 0039, causing all marked packets to be dropped, where best effort service is defined as performing services where there is no guarantee, hence dropping the marked packets is equivalent to there being no guarantee, therefore dropping packets is equivalent to best effort services);**

performing packet buffer memory reservation to guarantee memory space for an in profile CAR packets **(Para 0025, always available due to end to end bandwidth reservation in the queues).**

Le Gouriellec does not specifically disclose without automatically dropping the out of profile packet and dynamically allocating non-CAR packets to packet buffer memory during non-congestion and if space in the packet buffer memory is available.

Agrawal discloses without automatically dropping **(Para 0059 and 0064, where out of profile traffic is marked down in class, where the traffic may be marked down to a best effort class as seen in Para 0056. Also, given that traffic is out of profile, the data may be dropped or marked down according to Para 0064)** the out of profile packet **(Para 0057 notice the policer identifies out of profile packets).**

dynamically **(Para 0056, BE allocation is dynamic in that BE data may be stored in the BE queue such as that shown in fig 3, or dropped upon congestion**

as indicated in Para 0056) allocating non-CAR packets **(Para 0056, where packets classified as best effort packets are equivalent to non-CAR packets as they do not have a committed rate such as CAR packets do, and they use the BW leftover)** to packet buffer memory **(fig 3, see BE queue)** during non-congestion and if space in the packet buffer memory is available **(Para 0074, where packets are stored in the class queues such as the best effort during periods of non-congestion, where non-congestion indicates an availability, and Para 0076 discusses maintaining a count of the queues occupancy/availability).**

It would have been obvious to one of the ordinary skill in the art at the time of the invention was disclosed to modify the queuing mechanism as disclosed by Le Gouriellec, as taught by Agrawal, since stated in para0001 that such a modification will assist in controlling the traffic congestion.

Regarding Claim 4, Le Gouriellec discloses wherein said measuring and checking is via a token bucket model token **(Para 0032, token bucket meter).**

Regarding Claim 5, Le Gouriellec discloses a meter (fig 2, 44), which is a logical device **(Para 0030, logical device equivalent to hardware).**

Regarding Claim 7, Le Gouriellec discloses wherein said measuring and checking facilities in controlling CAR packets **(Para 0025 discusses committed rate traffic)**, input rate limiting packets and output rate limiting packets **(Para 0025, ER traffic indicative of input and output rate packets and Para 0034 discloses traffic shaping, indicative of input and output rate packets).**

Regarding Claim 8, Le Gouriellec discloses wherein IRL and ORL in profile packets receive best effort service **(Para 0037, all traffic above the CR but below CR +ER is marked to be dropped in case of congestion)** and wherein IRL and ORL out of profile packets are dropped **(Para 0038, traffic over CR + ER is discarded).**

Regarding Claim 9, Le Gouriellec discloses wherein said performing buffer memory reservation is via static memory reservation wherein memory space is statically partitioned between CAR packets **(Para 0025, shows statistical availability of the node queues, and fig 3 shows a statistical partition of the buffer where the partitions 60 and 62 make up the buffer)**

Le Gouriellec does not specifically disclose non-CAR packets.

Agrawal discloses non-CAR packets **(Para 0056, where packets classified as best effort packets are equivalent to non-CAR packets as they do not have a committed rate such as CAR packets do, and they use the BW leftover).**

It would have been obvious to one of the ordinary skill in the art at the time of the invention was disclosed to modify the queuing mechanism as disclosed by Le Gouriellec, as taught by Agrawal, since stated in para0001 that such a modification will assist in controlling the traffic congestion.

Regarding Claim 12, Le Gouriellec discloses a control pipe **(see fig 2)** configured to classifying **(Para 0031 teaches a classifier for classifying)** each received packet in an IP/Ethernet **(Para 0024 discusses Ethernet)** network into one of a plurality of quality of service (QoS) groups using information in a header of the packet **(Para 0031).**

Le Gouriellec discloses the control pipe being further configured for measuring and checking a traffic rate profile of the received packet against a corresponding service level agreement **(Para 0032, meter checks traffic profiles..).**

Le Gouriellec discloses marking the packet as one of an in profile packet and an out of profile packet **(page 3, Para 0032, identifies packets as in-profile or out of profile, and Para 0033, marker marks packet).**

Le Gouriellec discloses a transmit queue in communication with the control pipe **(fig 5, 106, queue**).

Le Gouriellec discloses performing packet buffer memory reservation to guarantee memory space for an in profile CAR packets **(Para 0025, always available due to end to end bandwidth reservation in the queues).**

performing buffer memory reservation is via dynamic memory reservation **(Le Gouriellec, Para 0025, end to end bandwidth reservation in the queues),**

wherein buffer memory reservation is via dynamic memory reservation **(Le Gouriellec, Para 0025, end to end bandwidth reservation in the queues)**

Le Gouriellec does not specifically disclose without automatically dropping the out of profile packet, comprising dynamically allocated non-CAR packets received during non-congestion and if the packet buffer memory space is available, in which packet buffer memory is dynamically allocated for non-CAR packets.

Agrawal discloses without automatically dropping **(Para 0059 and 0064, where out of profile traffic is marked down in class, where the traffic may be marked down to a best effort class as seen in Para 0056. Also, given that traffic is out of**

profile, the data may be dropped or marked down according to Para 0064) the out of profile packet **(Para 0057 notice the policer identifies out of profile packets)**

comprising dynamically **(Para 0056, BE allocation is dynamic in that BE data may be stored in the BE queue such as that shown in fig 3, or dropped upon congestion as indicated in Para 0056)** allocating non-CAR packets **(Para 0056, where packets classified as best effort packets are equivalent to non-CAR packets as they do not have a committed rate such as CAR packets do, and they use the BW leftover)** to packet buffer memory **(fig 3, see BE queue)** during non-congestion and if space in the packet buffer memory is available **(Para 0074, where packets are stored in the class queues such as the best effort during periods of non-congestion, where non-congestion indicates an availability, and Para 0076 discusses maintaining a count of the queues occupancy/availability).**

in which packet buffer memory is dynamically allocated **(Para 0056, BE allocation is dynamic in that BE data may be stored in the BE queue such as that shown in fig 3, or dropped upon congestion as indicated in Para 0056)** for non-CAR packets **(Para 0056, where packets classified as best effort packets are equivalent to non-CAR packets as they do not have a committed rate such as CAR packets do, and they use the BW leftover)**.

It would have been obvious to one of the ordinary skill in the art at the time of the invention was disclosed to modify the queuing mechanism as disclosed by Le Gouriellec, as taught by Agrawal, since stated in para0001 that such a modification will assist in controlling the traffic congestion.

Regarding Claim 15, Le Gouriellec discloses wherein said measuring and checking is via a token bucket model token **(Para 0032, token bucket meter)**. Le Gouriellec discloses wherein said measuring and checking facilities in controlling CAR packets **(Para 0025 discusses committed rate traffic)**, input rate limiting packets and output rate limiting packets **(Para 0025, ER traffic indicative of input and output rate packets and Para 0034 discloses traffic shaping, indicative of input and output rate packets).**

Regarding Claim 16, Le Gouriellec discloses a meter (fig 2, 44), which is a logical device **(Para 0030, logical device equivalent to hardware).**

Regarding Claim 17, Le Gouriellec discloses wherein IRL and ORL in profile packets receive best effort service **(Para 0037, all traffic above the CR but below CR +ER is marked to be dropped in case of congestion)** and wherein IRL and ORL out of profile packets are dropped **(Para 0038, traffic over CR + ER is discarded).**

Regarding claim 18, Le Gouriellec discloses and wherein a CAR packet is marked as an out of profile packet if the CAR packet exceeds the SLA **(Para 0037, all traffic above the CR but below the CR+ER is marked to be dropped in case of congestion)** and is one of provided with the best effort services and dropped **(Para 0039, causing all marked packets to be dropped, where best effort service is defined as performing services where there is no guarantee, hence dropping the marked packets is equivalent to there being no guarantee, therefore dropping packets is equivalent to best effort services).**

6. Claims 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Le Gouriellec et al. (US 2003/0112756) in view of Agrawal et al. (US 2003/0081546), in view of Yin et al. (US 6490251), hereinafter referred to as Yin.

Regarding claim 10, Le Gouriellec discloses performing buffer memory reservation is via dynamic memory reservation **(Le Gouriellec, Para 0025, end to end bandwidth reservation in the queues).**

Le Gouriellec does not specifically disclose non-CAR packets.

Agrawal discloses non-CAR packets **(Para 0056, where packets classified as best effort packets are equivalent to non-CAR packets as they do not have a committed rate such as CAR packets do, and they use the BW leftover).**

It would have been obvious to one of the ordinary skill in the art at the time of the invention was disclosed to modify the queuing mechanism as disclosed by Le Gouriellec, as taught by Agrawal, since stated in para0001 that such a modification will assist in controlling the traffic congestion.

The combined teachings of Le Gouriellec and Agrawal do not specifically disclose wherein a push out head drop mechanism is employed for packets to drop the oldest packets.

Yin discloses wherein a push out head drop mechanism is employed for packets to drop the oldest packets **(Col 9 lines 20-27 and Col 8 lines 10-16, where packets are dropped from the front of the queue based on congestion).**

It would have been obvious to one of the ordinary skill in the art at the time of the invention was disclosed to modify the combined teachings of Le Gouriellec and Agrawal

as taught by Yin, since stated in Col 8 lines 10-30 that such a modification will allow early indication of congestion and result in fast recovery from such congestion.

Regarding claim 20, Le Gouriellec discloses performing buffer memory reservation is via dynamic memory reservation **(Le Gouriellec, Para 0025, end to end bandwidth reservation in the queues).**

Le Gouriellec does not specifically disclose non-CAR packets.

Agrawal discloses non-CAR packets **(Para 0056, where packets classified as best effort packets are equivalent to non-CAR packets as they do not have a committed rate such as CAR packets do, and they use the BW leftover).**

It would have been obvious to one of the ordinary skill in the art at the time of the invention was disclosed to modify the queuing mechanism as disclosed by Le Gouriellec, as taught by Agrawal, since stated in para0001 that such a modification will assist in controlling the traffic congestion.

The combined teachings of Le Gouriellec and Agrawal do not specifically disclose wherein a push out head drop mechanism is employed for packets to drop the oldest packets.

Yin discloses wherein a push out head drop mechanism is employed for packets to drop the oldest packets **(Col 9 lines 20-27 and Col 8 lines 10-16, where packets are dropped from the front of the queue based on congestion).**

It would have been obvious to one of the ordinary skill in the art at the time of the invention was disclosed to modify the combined teachings of Le Gouriellec and Agrawal

as taught by Yin, since stated in Col 8 lines 10-30 that such a modification will allow early indication of congestion and result in fast recovery from such congestion.

7. Claims 2, 3, 13, 14, 25 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gouriellec et al. (US 2003/0112756) and Agrawal et al. (US 2003/0081546), hereinafter referred to as Agrawal as applied to the claims above, and further in view of Li et al. (US 20070086337), hereinafter referred to as Li.

Regarding Claim 2, Le Gouriellec discloses a control pipe **(shown in fig 1 and Para 0025, node queues along the LSP pipe).**

The combined teachings of Le Gouriellec and Agrawal do not specifically disclose wherein said classifying of the packet is performed by a control pipe via a content addressable memory.

Li discloses classification of a packet being perfumed via a content addressable memory (Para 0074)

It would have been obvious to one of the ordinary skill in the art at the time of the invention to associate the content addressable memory disclosed by Li, with the classifier disclosed by the combined teachings of Le Gouriellec and Agrawal. The motivation for this combination is to perform classification and look ups.

Regarding Claim 3, The combined teachings of Le Gouriellec, Agrawal and Li disclose a CAM for classification.

The combined teachings of Le Gouriellec and Li do not specifically disclose a multi-bank ternary CAM.

It would have been obvious to one of the ordinary skill in the art that the CAM disclosed by the combined teachings of Le Gouriellec, Agrawal and Li is not limited to a basic CAM, and may be specified such as that of a multi-bank ternary CAM depending on a designer's preference.

Regarding Claim 13, Le Gouriellec discloses a control pipe **(shown in fig 1 and Para 0025, node queues along the LSP pipe).**

The combined teachings of Le Gouriellec and Agrawal do not specifically disclose wherein said classifying of the packet is performed by a control pipe via a content addressable memory.

Li discloses classification of a packet being perfumed via a content addressable memory (Para 0074)

It would have been obvious to one of the ordinary skill in the art at the time of the invention to associate the content addressable memory disclosed by Li, with the classifier disclosed by the combined teachings of Le Gouriellec and Agrawal. The motivation for this combination is to perform classification and look ups.

Regarding Claim 14, The combined teachings of Le Gouriellec, Agrawal and Li disclose a CAM for classification.

The combined teachings of Le Gouriellec and Li do not specifically disclose a multi-bank ternary CAM.

It would have been obvious to one of the ordinary skill in the art that the CAM disclosed by the combined teachings of Le Gouriellec, Agrawal and Li is not limited to a

basic CAM, and may be specified such as that of a multi-bank ternary CAM depending on a designer's preference.

Regarding claim 25, Le Gouriellec discloses a control pipe **(shown in fig 1 and Para 0025, node queues along the LSP pipe).**

wherein control pipe employs a token bucket model **(Para 0032, token bucket meter)** to measure and check the traffic transmission rate profile of the received packet **(Para 0032, the meter check the traffic flow properties against traffic profiles)**, the token bucket model facilitates in controlling CAR packets **(Para 0025 discusses committed rate traffic)**, input rate limiting (IRL) packets and output rate limiting (ORL) packets (**the specification does not define IRL and ORL packets, so these terms are interpreted within its broadest scope as simply packets),**

wherein IRL and ORL in profile packets receive best effort service **(Para 0037, all traffic above the CR but below CR +ER is marked to be dropped in case of congestion)** and wherein IRL and ORL out of profile packets are dropped **(Para 0038, traffic over CR + ER is discarded).**

The combined teachings of Le Gouriellec and Agrawal do not specifically disclose wherein said classifying of the packet is performed by a control pipe via a content addressable memory and wherein the CAM comprises a multi bank ternary to provide packet classification.

Li discloses classification of a packet being perfumed via a content addressable memory (Para 0074).

wherein the CAM comprises a multi-bank ternary CAM (T-CAM) to provide packet classification **(It would have been obvious to one of the ordinary skill in the art that the CAM disclosed by the combined teachings of Le Gouriellec, Agrawal and Li is not limited to a basic CAM, and may be specified such as that of a multi-bank ternary CAM depending on a designer's preference)**

It would have been obvious to one of the ordinary skill in the art at the time of the invention to associate the content addressable memory disclosed by Li, with the classifier disclosed by the combined teachings of Le Gouriellec and Agrawal. The motivation for this combination is to perform classification and look ups.

Regarding claim 26, Le Gouriellec discloses a control pipe **(shown in fig 1 and Para 0025, node queues along the LSP pipe).**

wherein control pipe employs a token bucket model **(Para 0032, token bucket meter)** to measure and check the traffic transmission rate profile of the received packet **(Para 0032, the meter check the traffic flow properties against traffic profiles)**, the token bucket model facilitates in controlling CAR packets **(Para 0025 discusses committed rate traffic)**, input rate limiting (IRL) packets and output rate limiting (ORL) packets (**the specification does not define IRL and ORL packets, so these terms are interpreted within its broadest scope as simply packets),**

wherein IRL and ORL in profile packets receive best effort service (Para 0037, all traffic above the CR but below CR +ER is marked to be dropped in case of congestion) and wherein IRL and ORL out of profile packets are dropped (Para 0038, traffic over CR + ER is discarded).

The combined teachings of Le Gouriellec and Agrawal do not specifically disclose wherein said classifying of the packet is performed by a control pipe via a content addressable memory and wherein the CAM comprises a multi bank ternary to provide packet classification.

Li discloses classification of a packet being perfumed via a content addressable memory (Para 0074).

wherein the CAM comprises a multi-bank ternary CAM (T-CAM) to provide packet classification **(It would have been obvious to one of the ordinary skill in the art that the CAM disclosed by the combined teachings of Le Gouriellec, Agrawal and Li is not limited to a basic CAM, and may be specified such as that of a multi-bank ternary CAM depending on a designer's preference)**

It would have been obvious to one of the ordinary skill in the art at the time of the invention to associate the content addressable memory disclosed by Li, with the classifier disclosed by the combined teachings of Le Gouriellec and Agrawal. The motivation for this combination is to perform classification and look ups.

8. Claims 11 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gouriellec et al. (US 2003/0112756) and Agrawal et al. (US 2003/0081546) as applied to the claims above, and further in view of Chen et al. (US 6226685), hereinafter referred to as Chen.

Regarding Claim 11, The combined teachings of Le Gouriellec and Agrawal do not specifically disclose wherein a separate multicast queue and a separate multicast

threshold are defined for multicast packets, and wherein a multicast counter facilitates in tracking multicast packets.

Chen discloses wherein a separate multicast queue **(fig 3, 309)** and a separate multicast threshold **(Col 4, lines 47-50 when the counter value is expired)** are defined for multicast packets, and wherein a multicast counter **(Col 4 lines 14-17, generate a counter value)** facilitates in tracking multicast packets.

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify the invention of the combined teachings of Le Gouriellec as taught by Chen, since stated in the abstract that such a modification will improve the efficiency of BW utilization.

Regarding Claim 21, The combined teachings of Le Gouriellec and Agrawal do not specifically disclose wherein a separate multicast queue and a separate multicast threshold are defined for multicast packets, and wherein a multicast counter facilitates in tracking multicast packets.

Chen discloses wherein a separate multicast queue **(fig 3, 309)** and a separate multicast threshold **(Col 4, lines 47-50 when the counter value is expired)** are defined for multicast packets, and wherein a multicast counter **(Col 4 lines 14-17, generate a counter value)** facilitates in tracking multicast packets.

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify the invention of the combined teachings of Le Gouriellec and Agrawal as taught by Chen, since stated in the abstract that such a modification will improve the efficiency of BW utilization.

9. Claims 22, 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gouriellec et al. (US 2003/0112756) in view of Agrawal et al. (US 2003/0081546) in view of Chen et al. (US 6226685), in view of Yin et al. (US 6490251), hereinafter referred to as Yin

Regarding Claim 22, Le Gouriellec discloses classifying each received packet in an IP/Ethernet **(Para 0024 discusses Ethernet)** network into one of a plurality of quality of service (QoS) groups using information in a header of the packet **(Para 0031).**

measuring and checking a traffic rate profile of the received packet against a corresponding service level agreement **(Para 0032, meter checks traffic profiles..).**

marking the packet as one of an in profile packet and an out of profile packet **(page 3, Para 0032, identifies packets as in-profile or out of profile, and Para 0033, marker marks packet).**

for each profile packet pushing out queued packets during congestion if at least one of corresponding packet buffer memory and transmit queue is full **(Para 0039).**

queuing CAR packets into transmit queue memory **(Para 0041).**

Transmitting the out of profile packet using best effort service **(Para 0039, causing all marked packets to be dropped, where best effort service is defined as performing services where there is no guarantee, hence dropping the marked packets is equivalent to there being no guarantee, therefore dropping packets is equivalent to best effort services).**

Le Gouriellec does not specifically disclose non-CAR packets and without automatically dropping the out of profile packets.

Agrawal discloses non-CAR packets and without automatically dropping **(Para 0059 and 0064, where out of profile traffic is marked down in class, where the traffic may be marked down to a best effort class as seen in Para 0056. Also, given that traffic is out of profile, the data may be dropped or marked down according to Para 0064)** the out of profile packets **(Para 0057 notice the policer identifies out of profile packets)**, i.e. Agrawal also discloses providing best effort services as disclosed in Para 0056.

It would have been obvious to one of the ordinary skill in the art at the time of the invention was disclosed to modify the queuing mechanism as disclosed by Le Gouriellec, as taught by Agrawal, since stated in para0001 that such a modification will assist in controlling the traffic congestion.

The combined teachings of Le Gouriellec and Agrawal do not specifically disclose for a multicast packet, measuring and checking a multicast traffic rate profile of the received multicast packet using a corresponding multicast counter.

Chen discloses wherein a separate multicast queue **(fig 3, 309)** and a separate multicast threshold **(Col 4, lines 47-50 when the counter value is expired)** are defined for multicast packets, and wherein a multicast counter **(Col 4 lines 14-17, generate a counter value).**

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify the invention of Le Gouriellec as taught by Chen, since stated in the abstract that such a modification will improve the efficiency of BW utilization.

The combined teachings of Le Gouriellec and Agrawal and Chen do not specifically disclose wherein a push out head drop mechanism is employed for packets to drop the oldest packets.

Yin discloses wherein a push out head drop mechanism is employed for packets to drop the oldest packets **(Col 9 lines 20-27 and Col 8 lines 10-16, where packets are dropped from the front of the queue based on congestion).**

It would have been obvious to one of the ordinary skill in the art at the time of the invention was disclosed to modify the combined teachings of Le Gouriellec and Agrawal and Chen as taught by Yin, since stated in Col 8 lines 10-30 that such a modification will allow early indication of congestion and result in fast recovery from such congestion.

Regarding Claim 24, Le Gouriellec discloses marking and queuing an out of profile CAR packet as a non CAR packet (Para 0037).

Conclusion

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHRISTOPHER P. GREY whose telephone number is (571)272-3160. The examiner can normally be reached on 10AM-7:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Moe Aung can be reached on (571)272-7314. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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